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Truscott, J.B.

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Encouraging academic literacy by undergraduate science publication

Dr Jason B. Truscott, University of Plymouth

This editorial will give a frank view of how good academic practice can be encouraged and learned by means of scientific publication. However, before we look at this in more detail, I felt I should first briefly mention how I was incredibly excited to be 'handed the baton' as editor for *The Plymouth Student Scientist* earlier this year. Without question, this is a 'well established' undergraduate e-journal that has been going from strength to strength over the last ten years. Its longevity owed to several persons committed and continuing hard work (Uttley 2008), including Andrew Edward-Jones (previous editor) and Dr Karen Gresty. Dr Gresty is the Associate Dean Teaching and Learning for the Faculty of Science and Engineering, as well as project lead throughout the journal's life and I hope into the future.

The journal has certainly travelled far and wide since Dr Mick Uttley, the then Associate Dean Teaching and Learning wrote the first guest editorial for the journal. He truly gets to the heart of the journal's purpose as a platform to showcase undergraduate research, but '...not focused on a single academic discipline'. He later comments that articles from undergraduates are provided: '...warts-and-all...' (Uttley, 2008, p.1). As somebody who worked with Dr Uttley, I can certainly imagine him saying those words with conviction, and with a deeper intended meaning.

To unpick what Dr Uttley (2008) was inferring, I am convinced that his 'warts-and-all' comment was a deliberate means to ensure that the journal captures the imagination of prospective writers. This journal contains excellent examples of undergraduate research. If you do not believe me, look for yourself! However, Dr Uttley's editorial acknowledged that there might be occasional imperfections 'here and there' in the work. After all, is any research publication absolutely perfect, surely, they all have some weaknesses? The '...warts...' part therefore also suggests that we do not want the journal to feel inaccessible, and we do not want to discourage new writers. Not all articles may be 'exceptional' (although some might!), but the majority still qualify as very good or excellent. This is typically characteristic of undergraduate research projects and makes them perfectly acceptable for publication. At the start of their projects, students might have thought the idea of publishing their own article utterly impossible, but the *Plymouth Student Journal* makes this prospect excitingly attainable. I am sure others would agree!

At this point in the discussion, I should 'come clean' and highlight my 'potential bias', because I also wear a Learning Development Advisor 'hat'. A role which requires me to improve the quality of academic literacy across the university. I, therefore, see the combination of this Learning Development Advisor role and that of an editor perfectly matched, a means to ensure students develop their academic literacy and then

utilise those skills in research publications. Certainly, the University of Plymouth has a strong emphasis on quality in all its endeavours, and therefore research and writing need to follow suit. However, I feel this combination of academic literacy and journal actually arms me with a virtual swiss army knife of academic good practice, to be waved in multiple directions, and I hope to create quite a stir!

Let us take a closer look at using this tool to improve student learning development. I am often drawn to targeting those who might be finishing their 2nd year (level 5) and moving to the start of their 3rd year (level 6). I believe it is at this point we really need to capture their imagination and introduce a new goal for their degree. Some 'might not be' on track for a 1st overall, but if they obtain a good 70+% for their research project, they are eligible to publish in the Plymouth Student Scientist. Surely, this can only encourage and enhance quality? Certainly, most students know when their research projects are going well, and supervisors can spot that potential, having witnessed good work in the past.

However, being 'published' is arguably the most important way of sharing scientific findings, and often the most difficult to achieve in practice (Thomson & Kamler, 2013). We are not all endowed with excellent academic writing skills, these must be learned and developed, part of our lifelong learning. That is why we try our hardest in Learning Development to adopt different ways to help those students currently on track for a 2:1 upping their game towards a 1st. Empowerment is key, we simply provide them with the tools they need to do it by themselves, communicating how they can utilise our core services, and learn to apply those all-important academic skills. One central element of that learning journey into academia is the application of critical thinking (Allison, 2014), which I feel is the epitome of good Learning Development practice. Equally, we must remember that there are opportunities for each of us to learn from our peers. Research should not be a lonely task, but one to be shared with others (Gentle, 2016). Of course, studies in this area indicate that undergraduate students who share similar research experiences and practices with peers can have a positive effect on others starting their own research projects (Stanford *et al.*, 2017; Zimbardi & Myatt, 2014), and again research publishing could provide that platform to share and encourage others to do the same. Therefore, we should always support students to stretch themselves in their endeavours for academic achievement, making learning a truly shared and enjoyable experience (Gresty & Edwards-Jones, 2012).

I appreciate this is a short article, but I hope you are now more convinced that this journal does indeed provide a nurturing platform for both student development and enhancing quality. Especially when combined with Learning Development support throughout their degree. For me, greater encouragement is saying, there are no daft questions when going through this process, only pathways to greater confidence and understanding. In terms of the impact this journal might have, my greatest hope is that the experience will start students on the journey to become avid science writers in the future.

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